



Children's Progress Academic Assessment™ (CPAA™) Item Descriptions

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Introduction to the Children's Progress Academic Assessment (CPAA)

The Children's Progress Academic Assessment™ (CPAA™) is a computer adaptive assessment of core early literacy and mathematics skills for Pre K – 3rd Grade. It functions as an integral component of a comprehensive assessment program at the school, district or state level and consists of three parts:

1. An independently completed adaptive assessment
2. Immediately generated interactive reports
3. Recommended activities for one-on-one or small group instruction

The CPAA connects assessment with instruction by providing actionable data that can be used by teachers immediately to address each student's needs. The tool also enables educators to track student progress in service of meeting end-of-year learning standards in preparation for summative assessments.

A Dynamic Approach to Assessment

The CPAA was designed to provide immediate insights to help teachers move quickly from assessment to instruction. The team designing the CPAA collaborated with Teachers College at Columbia University and the Massachusetts Institute of Technology (MIT) to conduct groundbreaking research in early childhood assessment and reporting. With grants from the US Department of Education, the National Science Foundation, and the National Institutes of Health, this robust research program led to the development of a dynamic approach to assessment, marking a paradigm shift from traditional, linear testing.

The patented technology that was produced as a result of this collaboration is the foundation of the CPAA. The CPAA employs this technology to identify each student's zone of proximal development – the difference between what he or she can do independently and what he or she can do with scaffolding (targeted assistance). Thus, it pinpoints each student's strengths and weaknesses with great precision and helps educators tailor instruction to address them right away.

Scaffolding and Adaptive Structure

Traditional assessments (such as paper and pencil tests) are only able to reveal two polar states of understanding: unaided success and unaided failure. By dissociating what a child can do independently from what a child can do with scaffolding, the CPAA can provide information about where instruction would be most effective. The CPAA is different because it takes an extra step to help teachers identify more specifically which concept or sub-concept misunderstanding is causing students to answer incorrectly. This additional piece of information is very powerful for driving effective differentiated instruction.

In contrast to traditional assessments, the CPAA uses an adaptive structure to ensure that every student views material that is appropriately challenging. Correct responses are followed by more difficult questions and incorrect responses are followed immediately by verbal and/or visual scaffolding(. If the student struggles with the scaffolded content, he or she is presented with less challenging material. Below is an example of how scaffolding works within the CPAA. If the student incorrectly answers the initial question (Fig. 1a), he or she will see the scaffolded question (Fig. 1b).



Fig. 1a. Sample CPAA spelling question. The student is asked to spell the word “crown.” If he or she spells it incorrectly, the scaffolded question (1b) appears.

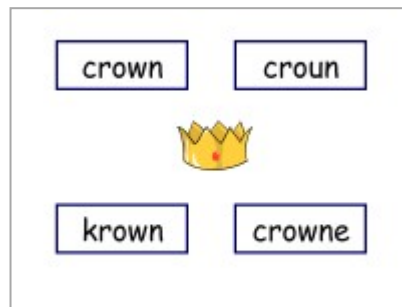


Fig. 1b. Scaffolded follow-up question. The student is asked to identify the correct spelling of the word from among three common distractors.

The use of scaffolding allows the teacher to see both what each student is able to do on his or her own, and what he or she can do with just a bit of targeted assistance. The CPAA employs this approach to systematically pinpoint each student’s unique *zone of proximal development (ZPD)* – the instructional “sweet spot” – across a broad range of early literacy and mathematics concepts.

To ensure that the CPAA is broad yet sensitive enough to provide challenging content across a wide range of performance levels, it is built with the capacity to allow a student to view material approximately one grade level above and below his or her grade, if necessary. For instance, a student demonstrating mastery in 1st Grade may move on to some content appropriate for 2nd Grade, while a student struggling with 1st Grade material will be directed to questions that are more appropriate at his or her level.

On the next page is a sample CPAA Lattice Map (Fig. 2), which illustrates the many different combinations of questions a student might experience on the assessment, each of which is responsive to the student’s performance (in this case, through phonemic awareness questions in 1st Grade).

- If the student correctly answers the initial question, he or she moves onto more advanced content (indicated by green arrows).
- If the student incorrectly answers the initial question but correctly answers the scaffolded follow-up, he or she moves on to additional grade-appropriate content (indicated by orange arrows).
- If the student incorrectly answers the scaffolded question as well, the CPAA takes him or her to less challenging content (indicated by red arrows).

Phonemic Awareness First Grade, Winter Assessment

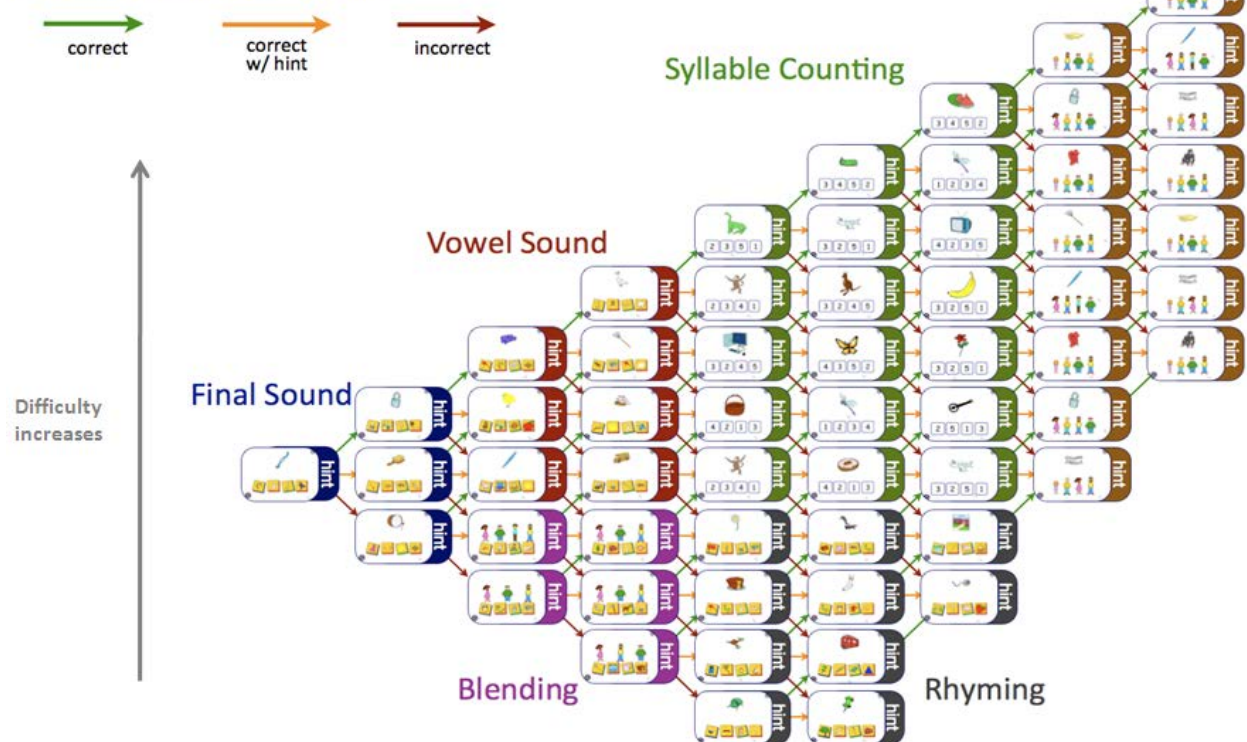


Fig. 2. Sample CPAA Lattice Map (phonemic awareness, 1st Grade).

Content Development and Standards Alignment

The CPAA contains more than 5,000 questions organized in a developmentally appropriate manner. All content aligns with the recently released Common Core State Standards, as well as the rigorous standards set forth by the National Council of Teachers of English (NCTE) and National Council of Teachers of Mathematics (NCTM). Additionally, each state's version of the assessment has been aligned to that state's specific learning goals to ensure that reports allow teachers to see immediately 1) how each student performed, 2) how that compares to the applicable end-of-year standard and 3) what activities can help him or her improve, be challenged or get more practice.

The CPAA features three distinct content banks (for the fall, winter, and spring administration periods). Content gradually increases in difficulty throughout the school year to help students progress in their learning. Thus, we recommend using the CPAA at least three times a year for universal screening and/or every few weeks for progress monitoring. This offers teachers several ways to track and improve progress throughout the year based on the needs of individual students.

Concepts Covered

Early Literacy

Listening	<ul style="list-style-type: none"> • Listening Skills 	<ul style="list-style-type: none"> • Listening Comprehension
Phonemic Awareness	<ul style="list-style-type: none"> • Compound Words • Blending • Rhyming • Initial Sound • Final Sound 	<ul style="list-style-type: none"> • Vowel Sound • Syllable Counting • Phonemic Addition • Decoding Nonsense Words
Phonics & Writing	<ul style="list-style-type: none"> • Letter Id. • Letter-Sound (<i>single letter, blends & digraphs</i>) • Spelling • Alphabet Order 	<ul style="list-style-type: none"> • Editing (<i>punctuation, capitalization, contractions, syntax, verb tense, possessive noun, plurals, pronouns</i>) • Paragraph Completion
Reading & Reading Mechanics	<ul style="list-style-type: none"> • Name Fluency • Concepts of Print (<i>book & text</i>) • Sight Words • Decodable Words • Sentence Reading • Synonyms/Antonyms • Homographs/Homophones • Advanced Vocabulary 	<ul style="list-style-type: none"> • Short Passage Comprehension • Long Passage Comprehension (<i>details, main idea, inference, concepts of print - genre, vocabulary, sequences and true statement/opinions</i>) • Prefixes • Parts of Speech (<i>prepositions, verbs, adverbs, adjectives, pronouns</i>)

Mathematics

Measurement	<ul style="list-style-type: none"> • Shape Id. • Length/Height/Size/Weight Comparison • Positions • Quantity Comparison • Currency Id. • Currency Addition & Subtraction • Measurement Units 	<ul style="list-style-type: none"> • Length/Weight/Temperature Estimation • Time Id. • Elapsed Time • Calendar • Bar & Line Graphs • Rounding
Numeracy	<ul style="list-style-type: none"> • Number Id. • Quantity Id. • Subitizing • Ordinality • Number After • Correct Order • Unit Blocks 	<ul style="list-style-type: none"> • Place Value • Expanded Notation • Number Comparison • Fraction Id. • Fraction Comparison • Fraction Addition & Subtraction • Decimal Comparison
Operations	<ul style="list-style-type: none"> • Addition • Subtraction • Multiplication 	<ul style="list-style-type: none"> • Division • Word Problems
Patterns & Functions	<ul style="list-style-type: none"> • Categorization • Shape Patterns 	<ul style="list-style-type: none"> • Numerical Patterns • Addition/Subtraction/Multiplication/Division Functions

The pages that follow provide more in-depth information about the types of questions included in the CPAA. The sub-concepts described are collections of several dozen questions. These item descriptions are just a sampling of the types of questions that a student might see, specifying how each question is presented and how students are expected to respond. The scaffolding descriptions explain how the CPAA further assists students if they respond incorrectly to the initial question.

Early Literacy Concepts

Listening (Pre-K - Kindergarten)

Listening Skills: PK Fall - K Spring

Items require the student to identify one to four pictures in a specific order. Item difficulty is based on the number of objects that the student needs to name in a sequence.

Scaffolding: The student is asked to complete a sequence with one less step. For example, if he or she had difficulty with a three-step sequence, he or she will now see a two-step sequence.



Listening Comprehension: PK Fall - K Spring

The student is required to view pictures of a story while listening to its narration and then respond to questions about the story, choosing from three to four possible answer choices. The comprehension questions require the student to draw on knowledge of word definitions and identify the main character, main idea, and details of the story. Item difficulty is based on the level of inference, vocabulary, and difficulty of distracters.



Scaffolding: The hints provide the student with a visual cue and verbal instructions refer to the broad classification for the response (e.g., the word “animal” might be used to direct the student to the answer “dog”), or a verbal definition of the correct response.

Phonemic Awareness (Pre-K – 2nd Grade)

Compound Words: PK Fall - PK Winter

The student is required to view two pictures and asked to select the response that verbalizes how the words sound when they are put together (e.g., “bird” and “house” become “birdhouse”).

Scaffolding: The hint minimizes the vocabulary requirement of the item and provides a verbal rather than a visual representation of the item. The hint question asks the student to select the picture that matches what the

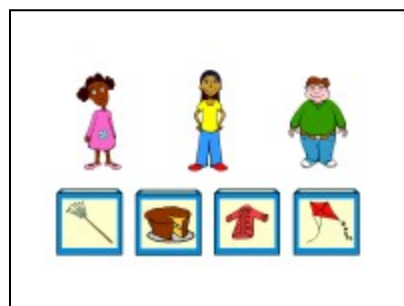


children on the screen are saying by selecting the response that blends the words together.

Blending: PK Spring – 1st Grade Spring

The student is required to listen to a series of sounds that are read by the narrator and visually depicted by a group of children making the sounds. The student is asked to identify, among the choices provided, the word the children are trying to say.

Scaffolding: The hint repeats the sounds again and asks the student to put the sounds together to make one word.



Rhyming: Pre-K Fall - 1st Grade Winter

The student is required to look at a picture named by the narrator and select a response that has the same ending sound as the object presented.

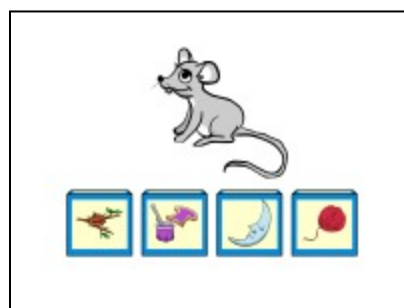
Scaffolding: The hint provides the student with three words in addition to the initial word presented. All four words have the same ending sound, helping a student who is having difficulty understanding what the task demands due to the language that is used in the directions (i.e., ending sound). The hint question asks the student to select another word with the same ending sound from three answer choices.



Initial Sound: Pre-K Fall - 1st Grade Fall

The student is required to view pictures of three objects whose names all start with the same beginning sound. Each object is named by the narrator. The narrator provides the beginning sound that the objects have in common and asks the student to choose another object from three answer choices, whose name begins with the same sound as the names of the three initially presented objects. The names of the answer choices are spoken by the narrator when the student rolls over each option with his or her mouse. In later grades, only one object is presented and the child must choose from four answer choices.

Scaffolding: The hint presents one of the initial pictures and repeats the name of the object and the pronunciation of the initial sound twice. The student is asked to select the object with the same initial sound from the same three answer choices.



Final Sound: Kindergarten Winter - 2nd Grade Fall

The student is presented with a picture of an object. The narrator names the object and asks the student to select another object whose name has the same ending sound as the first object presented.

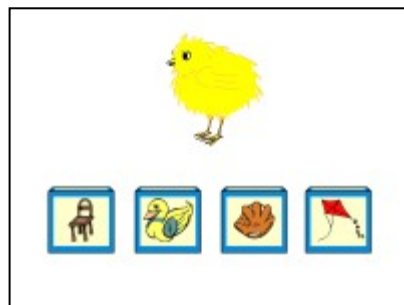


Scaffolding: The hint presents the student with the word again. The final sound is presented twice following the word.

Vowel Sound: 1st Grade Fall - 2nd Grade Fall

The student is presented with a word and then asked to choose the picture with the same vowel sound that appears in that word. The four picture choices are named by the narrator when the student rolls his or her mouse over each picture.

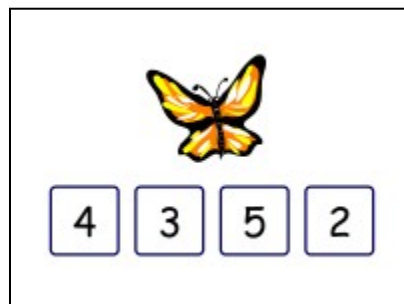
Scaffolding: The hint repeats the word again, then the vowel sound, and then the word and asks the student once again to click on the appropriate picture.



Syllable Counting: Kindergarten Spring - 2nd Grade Spring

The student is presented with a picture of an object and asked to count the syllables in the word, which is also named by the narrator. The student is asked to select the choice that corresponds to the number of syllables in the word.

Scaffolding: The hint provides the student with a description and example of syllable counting using a different word with the same number of syllables.



Phonemic Addition: 1st Grade Winter - 2nd Grade Spring

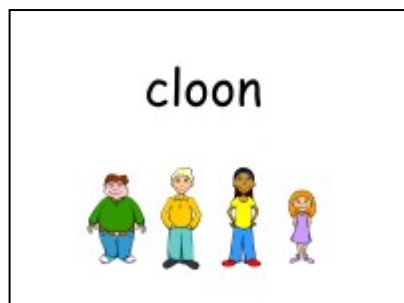
The student is presented with a picture that is named by the narrator. The student is asked to add a sound to the beginning or ending of the word to make a new word (that does not correspond to the picture). The task requires the student to select the correct new word from four possible responses spoken by children on the computer screen.

Scaffolding: The hint provides the student with a reminder of the task, the beginning sound and then the word or the word and then the ending sound, repeated twice.



Decoding Nonsense Words¹: 1st Grade Spring - 2nd Grade Spring

The student is presented with a pseudo word and four talking children. Each child reads the answer choices and the student is required to click on the student who is reading the word correctly.



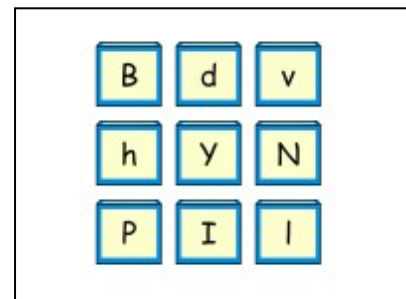
¹ Note that if a child demonstrates sufficient mastery of phonemic awareness in first grade, it is possible for him/her to view some questions in decoding. By the end of second grade, the Phonemic Awareness & Phonics portion of the assessment transitions to focus almost entirely on decoding. If a child demonstrates difficulty with decoding in second grade, then he or she will be assessed on concepts in phonemic awareness.

Scaffolding: The hint is provided by a narrator who sounds out part of the word and asks the student what would happen if the remaining letters were added.

Phonics and Writing (Pre-K – 3rd Grade)

Letter Id.: Pre-K Fall – 1st Grade Fall

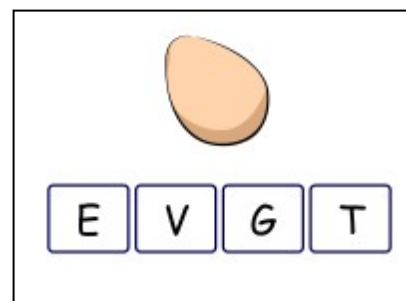
The student is presented with four to nine letters and asked to pick the one named by the narrator. The letters are presented first in upper case then in lower case and then a mix of both. Less challenging items provide a word that begins with the letter. More advanced items name the letter without an associated word. In the more advanced items, responses are changed from a mix of upper and lower case letters to all upper case letters.



Scaffolding: The hint repeats the question again and the answer choices change from upper case letters to lower case or from lower case letters to upper case (the reverse of the original presentation).

Letter-Sound - Single Letter: Pre-K Spring – 1st Grade Fall

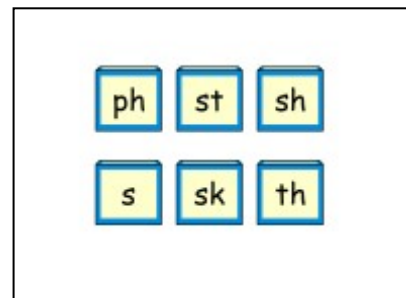
The student is presented with six to nine letters. The narrator makes a sound and provides an example of a word that begins with that sound. The task requires the student to select the letter that is associated with the sound.



Scaffolding: The hint repeats the question and provides a picture of the word that was presented verbally in the original question, now with fewer answer choices. The student is also provided with corrective feedback that plays back the sound of the incorrect letter that he or she chose the first time.

Letter-Sound - Blends & Digraphs: Kindergarten Fall – 1st Grade Winter

The student is presented with six to nine letter tiles with one to two letter combinations. The task requires the student to click on the letter combination that makes a particular sound and is provided with a word that has the same beginning sound as the letter combination that he or she is asked to identify.

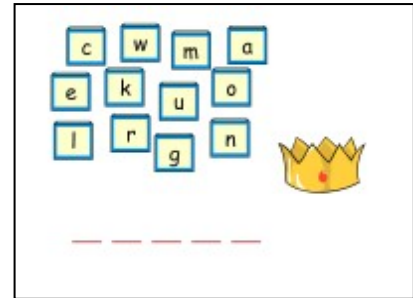


Scaffolding: The hint presents a picture of a word that begins with the same sound and fewer answer choices.

Spelling: Kindergarten Winter - 3rd Grade Spring

The student is presented with a picture that is named by the narrator and the number of blank spaces corresponding to the number of letters in that word. The task requires the student to select the correct letters that will spell that word from a list of letters. The list includes additional letters not found in the word.

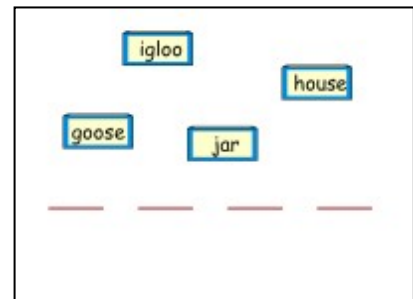
Scaffolding: The hint provides four spelling options for the word. The student is asked to select the correct spelling of the word.



Alphabet Order: 1st Grade Winter - 1st Grade Spring

The student is presented with four words scattered on the screen. The task requires him or her to click on the words in alphabetical order.

Scaffolding: The hint provides the student with the four words in four different sequences and asks him or her to select the sequence that correctly lists the words in alphabetic order.



Editing - Punctuation: 1st Grade Spring - 3rd Grade Spring

Less challenging items present a sentence to the student and the narrator indicates that punctuation is missing at the end of the sentence. The student is required to select the correct punctuation from the answer choices. More difficult items present the student with a set of four sentences, one of which has correct punctuation. The student is required to select the sentence with the correct punctuation. Editing includes punctuation for the correct use of commas, colons, end punctuation, statements, questions, exclamations, and quotation marks.

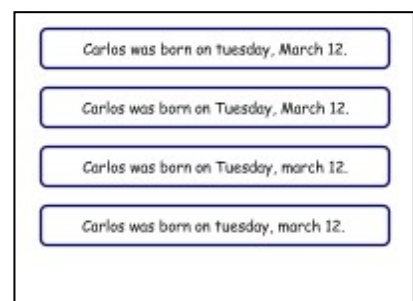
Scaffolding: The hints are different at each level and either provide the student with an opportunity to hear the sentence read by the narrator, the name of the type of sentence (e.g. "This sentence is a question"), the punctuation rule that applies to the sentence, or a reminder of where punctuation should go.



Editing - Capitalization: 1st Grade Spring - 3rd Grade Spring

Less challenging items present a sentence that has a word that is not capitalized. The task requires the student to click on the word that should be capitalized in the sentence. More advanced items present the student with a choice of four sentences and ask him or her to select the sentence that is correctly capitalized.

Scaffolding: The hint provides the student with the capitalization rule (i.e., instructional in nature).



Editing - Contractions: 2nd Grade Fall - 2nd Grade Spring

The student is presented with a sentence in which two words are underlined. The student is required to select the correct contraction for the words from four answer choices.

Scaffolding: The hint defines a contraction as a shorter version of two words. The words that the student must contract are then read by the narrator, and the four answer choices are presented again.


Sal could not go to the movie.

couldnot could'nt couldn't could've

Editing - Syntax: 2nd Grade Fall

The student is presented with eight to eleven words, four to seven blank spaces where the words are to be placed followed by a punctuation mark, and a picture to visually depict the content of the sentence. The student is required to create a sentence to describe the picture by selecting the correct words in the correct order.

Scaffolding: The hint presents four sentences as answer choices for the student to choose from.



walk somebody by were A
cat this walked flowers the

Editing - Verb Tense: 2nd Grade Winter - 3rd Grade Winter

The student is presented with a sentence with a blank space where there is a verb missing and four answer choices. The student is required to complete the sentence by selecting the correct verb(s).

Scaffolding: The hint provides a statement that emphasizes the time when the event occurred), the word and the verb tense the question is asking for, a strategy for finding the answer, or four sentences, one of which is the correct choice.

"Last night, Sparky, our dog _____ under the porch. He wouldn't come when we called so we had to leave him outside."

has slept slept would sleep is sleeping

Editing - Possessive Noun: 2nd Grade Spring - 3rd Grade Spring

There are two possible presentations of these items. In one presentation, the student views a sentence with one part missing and is then required to read the sentence and select the correct possessive noun to complete the sentence from four answer choices. Other items are presented in the form of a complete sentence with one part underlined. In that case, the student is required to select the possessive noun that would correctly replace the underlined part of the sentence from four answer choices.

Scaffolding: The hint is an oral presentation of the possessive noun rule that should be applied to correctly respond to the question.

The _____ sleepover party was lots of fun.

girls'
gir'ls
girls's
girls

Editing - Plural Noun: 2nd Grade Spring

The student is presented with a sentence with one word missing. The student is required to complete the sentence with the plural form of the correct word from four answer choices.

Scaffolding: The hint provides the student with an oral presentation of the singular form of the word and reminds him or her to look for the plural form of the word to complete the sentence.

Chad set the table with six _____.

dishs	dishes	dish's	dish
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Editing - Pronoun: 3rd Grade Spring

The student is presented with a sentence with one part missing. The student is required to select the correct pronoun to complete the sentence from four answer choices.

Scaffolding: The hint presents a complete sentence with a proper noun(s) underlined. The student is required to change the underlined proper noun to a pronoun by selecting the correct pronoun from four answer choices.

Katie loves to draw. _____ draws dogs, flowers, and her cat Jasper.

I	Her	He	She
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Paragraph Completion: 3rd Grade Fall - 3rd Grade Spring

The student is presented with a written paragraph. The student is required to read the paragraph and select the sentence that should come next from four answer choices.

Scaffolding: The hint provides the student with the paragraph's main idea and a prompt relating to the purpose of a concluding sentence.

Here's how to grow your own bean plant. First you need a pot. Fill the pot with soil. Gently push your finger into the soil, making a little hole. Drop your bean into the hole and cover it with soil. Make sure your bean gets plenty of sun and water!

Beep like lots of soil, so make sure you have enough dirt in the pot.
Don't make the hole too deep!
Only put a little pot in the pot so there is room for the bean to grow.
By following these steps, you'll soon have a bean plant of your own.

Reading and Reading Mechanics (Pre-K – 3rd Grade)

Name Fluency: Pre-K Fall - Kindergarten Spring

The student is presented with four boxes, two word distractors, one non-word distractor, and one that has the student's name. The student is required to select the box that correctly identifies his or her first name or last name.

Scaffolding: There is no hinting provided for this item.

Sebph	Salty
Running	Sarah

Concepts of Print - Book & Text: Pre-K Fall - Kindergarten Spring

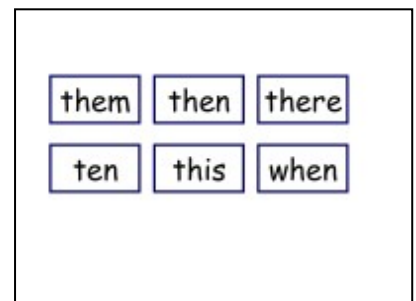
The student is presented with questions read aloud by the narrator. The student is required to listen to the question and click on the correct part of the page or a visual depiction of the response representing the print concept. The student is asked to identify concepts such as the cover of a book, title of a book, and the author's name. As items increase in difficulty, concepts presented become more closely related to written text (e.g., the first word and last word in a sentence). The student is also asked to distinguish between words, letters, pictures, and numbers.



Scaffolding: The hints for these items repeat the question and ask the student to take a closer look at the picture, provide a clue that the concept is found in a book, provide a definition of the print concept being introduced (e.g., the title is the name of the book), or present an easier item related to the concept asked in the original question.

Sight Words: Kindergarten Fall - 1st Grade Spring

The student is presented with four to six words depicted in boxes on screen. The student is required to select the box with the word named by the narrator.

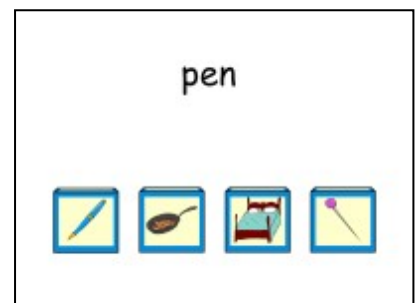


Scaffolding: The hint presents the question again with fewer answer choices.

Decodable Words: Kindergarten Fall - 1st Grade Spring

The student is presented with a word written on screen and asked to select the picture that best matches the word from four choices.

Scaffolding: The hint presents the word again, as well as four answer choices that consist of four children reading a word. The student is required to select the picture of the student who is reading the word correctly.



Sentence Reading: Kindergarten Fall - 2nd Grade Spring

These items are presented in two ways. In less challenging items, the student is presented with a sentence and asked to select the picture that best matches the sentence from four answer choices. In the more advanced items, the student is presented with a picture and four sentences as answer choices. The student is required to select the sentence that correctly describes the picture.

Scaffolding: The hint is provided in the form of corrective feedback following the student's incorrect response. The narrator describes what is happening in the incorrect picture choice.



Short Passage Comprehension: 1st Grade Spring - 2nd Grade Spring

A short passage is presented in written form. The student is required to read the passage, click on a check mark when finished, and then respond to a question about the passage by selecting the correct response from four answer choices.

Scaffolding: The hint presents the passage again with the particular segment highlighted which contains the information that is needed to respond to the question.

When Justin gets home from baseball practice, he likes to sit in his favorite chair and read his book. After that, he does his homework in the kitchen. When he's done, it's time to eat the table for dinner.

☐ Do his homework

☐ Watch TV

☐ Read his book

☐ Talk to his mother

Long Passage Comprehension: 2nd Grade Fall - 3rd Grade Spring

The student is presented with a one to two paragraph passage that is approximately nine to twelve sentences long. The student is required to click on a green check mark when finished. He or she then answers questions about the passage. Each question has four answer choices. Items include concrete and inferential questions related to the main idea, details in the passage, sequences of events, word definitions interpreted from context clues, genre and true or false statements about the passage that the student is asked to evaluate.

Scaffolding: The hint highlights a portion of the passage for the student and/or provides a detail from the passage that is needed to answer the question.

Every spring, Michael and his dad plant a garden in their backyard. This spring, they planted corn, tomatoes, and cucumbers. Michael planted the seeds in a spot that would get plenty of sunlight. He also watered the garden four times a week. After a couple weeks, Michael's plants were green and tall. Soon, he thought he would have lots of tasty vegetables. After weeks of waiting, Michael still did not have any vegetables. He thought he had done something wrong. One day, when he was in the garden, he noticed a trail of leaves starting at his corn plants. Michael followed the trail. It led him straight to the doghouse. Inside, Michael found his dog, Phil, eating a big carrot!

☐ He dog ate them.

☐ He did not give them enough water.

☐ His neighbor took them.

☐ A rabbit ate them.

Antonyms and Synonyms: 3rd Grade Fall - 3rd Grade Spring

The student is presented with a word on screen and asked to select the word that has the same (or opposite) meaning from four answer choices.

Scaffolding: The hint provides corrective feedback for each incorrect response. The narrator reads the word to the student and gives a reminder of the task, which is to find the answer that has the same (or opposite) meaning as the underlined word.

expensive

☐ costly

☐ useful

☐ cheap

☐ fancy

Homograph: 3rd Grade Fall

The student is presented with two sentences, each with one word missing. The student is required to select from four answer choices one word with two meanings that can be used to complete both sentences.

Scaffolding: The hint provides corrective feedback for each incorrect response by indicating why the response was incorrect (i.e., the word fit in one of the sentences but not the other, or the word did not fit in either sentence.)

Sue watched the man break the _____ for hot dog eating.

The teacher needed to _____ the grades in her book.

☐ tie

☐ write

☐ record

☐ goal

Homophones: 3rd Grade Fall

The student is presented with a sentence with one word missing. The student is required to select the words that sound the same but have a different meaning from four answer choices that contain words that have similar sounds as the correct and incorrect word meaning but are incorrectly spelled.

Scaffolding: The hint suggests that the student look carefully at the spelling of each answer choice.

Would you please _____ me a glass of juice?

poor	pour	pore	pure
------	------	------	------

Advanced Vocabulary: 3rd Grade Fall - 3rd Grade Spring

The student is presented with a word and the definition of the word in oral and written form. The student is required to select the sentence that uses the word correctly from four answer choices.

Scaffolding: The hint instructs the student by providing a definition of the word and asks the student to read each sentence carefully to make sure that the definition makes sense in the sentence.

To be naughty is to _____.

misbehave	win	be good	behave
-----------	-----	---------	--------

Prefixes: 3rd Grade Fall

The student is presented with a word that has a blank space before it and asked to select from four answer choices a prefix to add to the beginning of the word, which would make the word take on a different definition provided by the narrator.

Scaffolding: The hint presents the student with four words. Each of these words is a combination of the original word with one of the original prefix options. The narrator asks the student to pick the word with a specified definition related to the original word (e.g., the word that means the opposite of X).

__build

re	un	pre	de
----	----	-----	----

Parts of Speech - Prepositions: 3rd Grade Fall

The student is presented with a sentence with one part missing. He or she is required to select the part that is missing from four answer choices.

Scaffolding: The hint presents the student with each answer choice as it would appear in the sentence and the narrator reads each option to the student. The student is required to select the correct sentence.

_____ the play ended, Joe's family went to buy ice cream.

After	Besides	Despite	If
-------	---------	---------	----

Parts of Speech - Verbs, Adverbs, and Adjectives: 3rd Grade Fall - 3rd Grade Spring

The student is presented with a sentence that contains a missing word or phrase. The student is required to select the missing word or phrase from four answer choices.

Scaffolding: The hint presents the narrator reading the sentence with the incorrect response choice that the student selected and asks the student to select another answer choice.

Please close the door _____ so you don't wake the baby.

quietly	quiet	louder	softest
---------	-------	--------	---------

Parts of Speech - Pronouns: 3rd Grade Winter

The student is presented with a sentence with a word or some words underlined. The student is required to select the pronoun that can take the place of the underlined word(s) from four answer choices.

Scaffolding: The hint provides corrective feedback for each incorrect response that explains why the answer the student chose is incorrect.

Sal left his backpack at school.

those	it	them	him
-------	----	------	-----

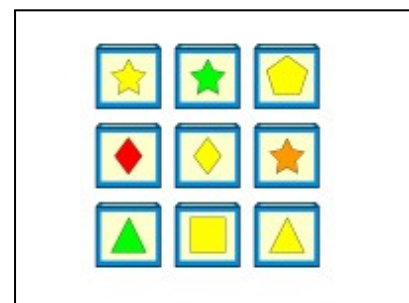
Mathematics Concepts

Measurement (Pre-K – 3rd Grade)

Shape and Color Id.: Pre-K Fall - through Pre-K Winter

The student is presented with four to nine colored shapes and is required to click on the colored shape named by the narrator.

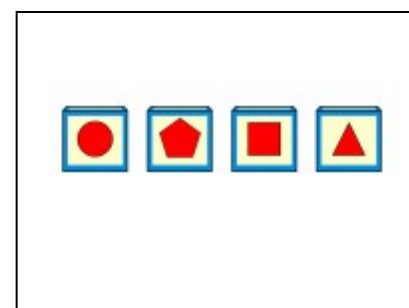
Scaffolding: The hint provides corrective feedback pertaining to a partially correct response based on color or shape and presents the question again with fewer answer choices.



Shape Corner Counting: Pre-K Spring

The student is presented with four shapes and asked to select the shape with a specified number of corners named by the narrator.

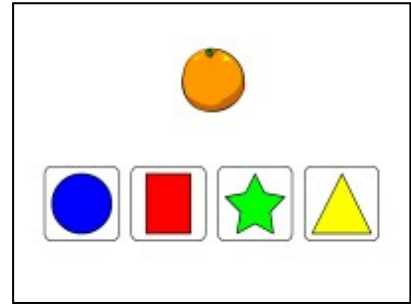
Scaffolding: The hint provides corrective feedback for the student's incorrect response that informs him or her how many corners or sides there are in the shape that he or she has chosen incorrectly.



Shape Matching and Generalization: Pre-K Fall - Kindergarten Winter

The student is presented with an object and asked to select the shape that looks the most like the target object from four to six answer choices. In some questions, the student is presented with a series of objects and asked to identify the one that is not a specified shape named by the narrator.

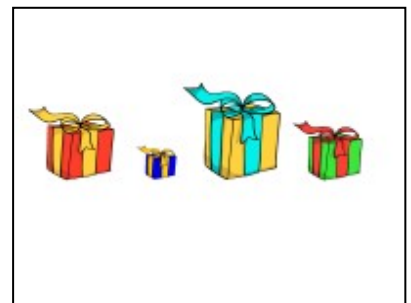
Scaffolding: The hint provides corrective feedback for the student's incorrect response and the narrator identifies any features of the selected shape that corresponds with his or her choice. The hint question is presented with all shapes rather than objects.



Height/Length/Size Comparison: Pre-K Fall - Kindergarten Spring

The student is presented with pictures of four randomly ordered objects of different heights, lengths, or magnitudes. The student is required to select the object that is the shortest, longest, tallest, smallest, largest, or biggest of the objects.

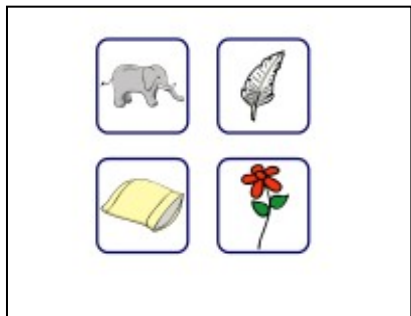
Scaffolding: The hint presents the objects vertically by size order, height order, or horizontally by length in order, instead of randomly.



Weight Comparison: Pre-K Spring - Kindergarten Winter

The student is presented with pictures of objects that vary by weight. The student is asked to select the object that he or she thinks is the lightest, heaviest, or weighs least or most in real life.

Scaffolding : The hint provides the student with the meaning of the weight word used in the question and provides a synonym for the word (e.g., heaviest means most).



Positions: Pre-K Fall - Kindergarten Winter

The student is presented with a scenic picture in which objects are placed above, below, under, over, on, on top of, next to, behind, in front of, inside, or outside of another object in the scene. The student is required to identify the object that is in the position named by the narrator.

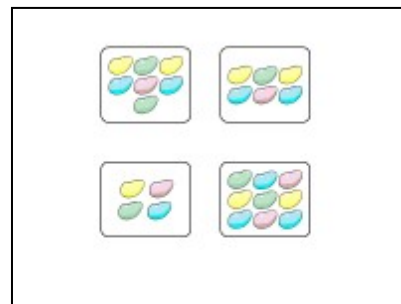
Scaffolding: The hint provides the student with corrective feedback that describes the placement of the object that corresponds to the student's incorrect response.



Quantity Comparison: Pre-K Spring - Kindergarten Winter

The student is presented with pictures of objects of varying quantities. The student is required to select the picture that contains the least or most of a feature named by the narrator. More challenging questions present the student with an object that has a specified quantity of features named by the narrator. The student is asked to select the response that has less or more of the given feature than the number identified by the narrator.

Scaffolding: The hint provides the student with the meaning of the quantity word presented in the item and provides a synonym for the word (e.g., fewest means smallest number of X). Some hints also ask the student to count the objects being compared.

**Currency Id.:** Kindergarten Winter - 1st Grade Winter

The student is presented with four coins and asked to select the coin named by the narrator. In more advanced questions, the student is presented with four coins and asked to select the one that is worth the amount specified by the narrator.

Scaffolding: The hint provides corrective feedback for each incorrect response by indicating the monetary value of the coin selected and repeating the question.

**Currency Addition:** Kindergarten Spring - 2nd Grade Spring

The student is presented with 2 to 8 coins and asked to select the total amount of money presented from four numerical answer choices (written out as dollar amounts). In more advanced questions, the student is presented with a picture of items in a store with price tags. The student is told the amount of money that can be spent in the store and required to select the items that can be purchased for the specified value from four answer choices representing different store item combinations.


Scaffolding: The hint for less challenging items presents the pictures again with the monetary value for each coin written below it. The amounts are stated by the narrator, and the question is presented again. Following more advanced questions, the hint provides corrective feedback for the student's incorrect response by indicating the total cost of the items the student selected. The question is presented again with the answer choices written out in words (e.g., 65 cents) rather than as numerical dollar amounts (\$0.65).



Currency Subtraction: 2nd Grade Spring

The student is presented with an image that depicts a scenario described by the narrator. The narrator describes a situation in which a person comes to a store with a certain amount of money and spends some specified amount. The student is required to select the amount of money left over from four answer choices.

Scaffolding: The hint shows a pictorial representation of the coins needed for the purchase with the amount used crossed out. The question is repeated again with the same four choices.




Tina got \$1.00 for doing her chores. She spent \$0.35 on stickers. How much money does she have left?

\$0.65	\$1.35
\$0.50	\$0.25

Measurement Units: Kindergarten Winter - 3rd Grade Spring

The student is presented with two types of objects that differ in size and are displayed in random order, side by side, or horizontally on the page. The student is required to select the object that is a specified number of smaller objects long or to select the number of objects that make up the longest or shortest object. Some questions require the use of a ruler or thermometer. In later grades, the student is required to select the correct measurement unit for the object identified in the picture (i.e., if the picture is depicting length, then the response should be in inches). Some questions require the student to complete basic computations with units.

Scaffolding: The student is asked what unit of measurement applies to the situation or picture. The hint provides corrective feedback that describes what the measurement unit that the student selected is used to measure and presents the question again with the same answer choices.




ounces	miles
feet	inches

Length/Weight/Temperature Estimation: 2nd Grade Winter - 3rd Grade Winter

The student is presented with one to four pictures and asked to estimate the measurement of one item in real life (e.g., inches, feet, pounds, degrees). The student is required to select either the correct estimated object or measurement unit.

Scaffolding: The hint reorders the objects to help the student estimate the measurement or gives corrective feedback for each incorrect answer choice.

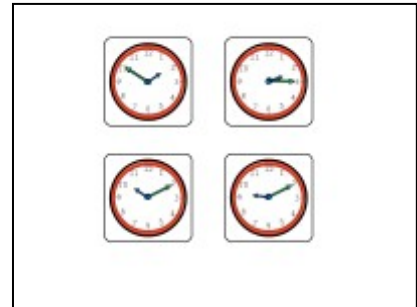


15 feet	15 centimeters
15 inches	15 pounds

Time Id.: Kindergarten Spring - 3rd Grade Winter

The student is presented with four clocks and asked to identify the clock that shows the time specified by the narrator. In more advanced questions, the student is presented with a target clock and asked to select the clock that shows a time to the nearest quarter hour or a specified time “past” the hour named by the narrator.

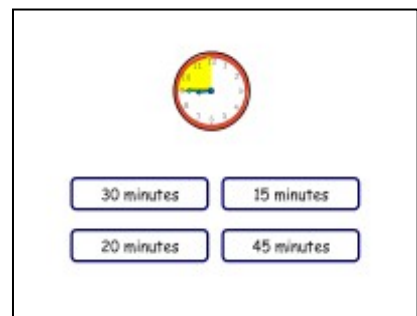
Scaffolding: The hint provides corrective feedback for incorrect answer choices by identifying the time shown on the clock that the student incorrectly selected. The hint instructs the student that the short hand points to the hour and the long hand points to the minutes and repeats the question again.



Elapsed Time: 2nd Grade Winter - 3rd Grade Spring

The student is presented with two clocks that show different times. The student is provided with a story involving time and asked to identify the number of minutes that fall between the two times presented on the clocks, given the information presented in the story. The student is required to choose the correct number of minutes from four answer choices.

Scaffolding: The hint provides one clock. The area between the two times that were presented in the original item is now shaded on this clock. The student is asked how many minutes are shown in the shaded area of the clock.



Calendar: Kindergarten Spring - 1st Grade Spring

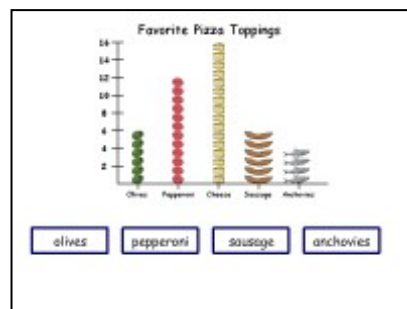
The student is presented with a calendar page for one month. He or she is asked to identify the day of the week when given the date, the date of the first or last weekday in a week or month, or the first to fourth weekday of the month, or the weekday of a specific date (e.g., 20th). In more advanced questions, the student is presented with a calendar page for one month and asked to choose from four answer choices the number of days in a specified number of weeks named by the narrator.

Scaffolding: The hint presents the item again with the week or days referred to in the original question highlighted and the question is presented again. In more advanced questions, the hint provides the student with the number of days in one week and presents the question again.



Graphing: 1st Grade Spring - 3rd Grade Spring

In the younger grades, the student is presented with a pictograph and asked to respond to a question about the graph. In later grades, the student is presented with bar and line graphs and is required to respond to a question about the graph. The questions require the student to interpret the graph, add, subtract and compare quantities, or respond to questions using vocabulary, such as the same, greater than or less than, fewer than or more than a specified number, least, most, best, and most popular. More difficult items require interpretation of numbers depicted on the x and y axis.



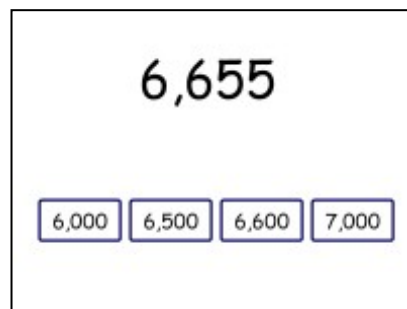
Scaffolding: Following items that contain bar graphs, the hint presents a pictograph in place of the bar graph so that the student can count the number of items required to answer the question. Following items with line graphs, hints present the item again using a bar graph in place of the line graph, using smiley faces or boxed divisions to represent measurement units.

Rounding: 2nd Grade Winter - 3rd Grade Spring

The student is presented with a number and asked to round it to the nearest 10s or 100s.

Scaffolding:

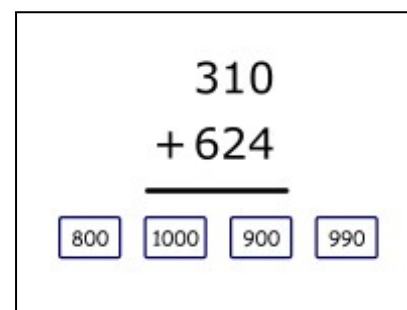
The hint provides corrective feedback in the form of a reminder of the rounding rule. The question is repeated again with the same answer choices.



Number Estimation: 3rd Grade Winter

The student is presented with two large numbers and asked for the best estimate of their sum from four answer choices.

Scaffolding: The hint provides corrective feedback for each incorrect answer choice in the form of a reminder that indicates that the student can give a best estimate without adding the columns.

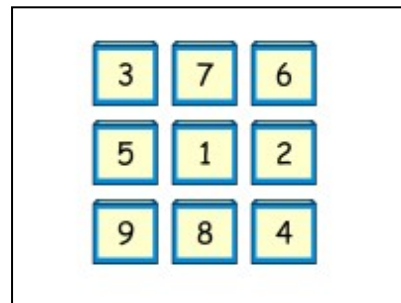


Numeracy (Pre-K – 3rd Grade)

Number Id.: Pre-K Fall - Kindergarten Winter

The student is presented with a grid of numbers in random order. The student is required to select the number named by the narrator from the 9 answer choices presented on the grid.

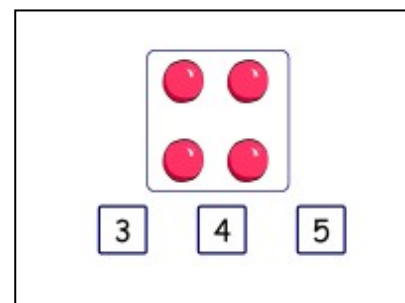
Scaffolding: The hint presents the grid again with the same numbers in numerical order.



Quantity Id.: Pre-K Fall - 1st Grade Winter

In some questions, the student is presented with a few identical objects (e.g., balls). He or she is required to count the objects and select the correct quantity from three answer choices. In other questions the student is presented with groups of identical objects placed randomly on screen and asked to select the number that represents how many objects there are all together.

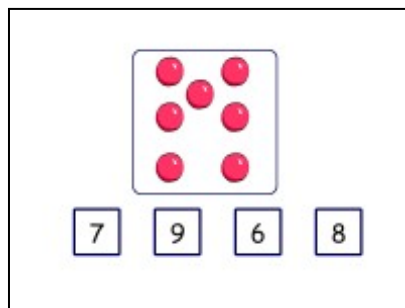
Scaffolding: The hint provides corrective feedback for each incorrect response by naming the number of objects in the selected set. The hint question either asks the student to select the set that contains a specified number of objects named by the narrator or the objects are rearranged in a linear fashion to help the student's counting.



Subitizing: Kindergarten Fall - 1st Grade Fall

The student is presented with objects that are flashed quickly on screen. He or she is required to remember the objects shown and select the number from four answer choices. The items increase in difficulty as more objects are flashed on screen.

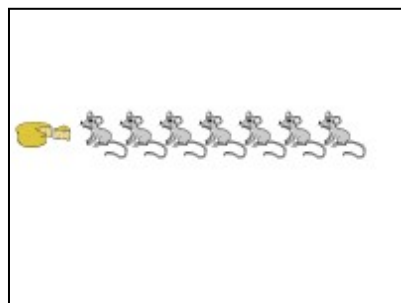
Scaffolding: The hint leaves the objects on the screen and asks the student to count how many he or she can see.



Ordinality: Pre-K Spring - 1st Grade Spring

The student is presented with a series of objects in a line and asked to select the object that is first, last, in the middle, or in a specified position (e.g., third) in line from a starting location. The items increase in difficulty, as more objects are presented in the line and the student is required to count higher values in order and associate the value with words that represent higher placement values. More advanced questions use vocabulary such as "second to last" or ask the student to select the object that is in a specified location "from the left" in the line.

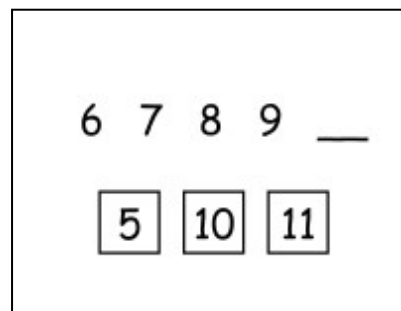
Scaffolding: The hint presents the objects with numbers above them.



Number After: Pre-K Fall - through Pre-K Spring

The student is presented with an ordered series of numbers with a blank space at the end. The student is required to select the number that comes next from three answer choices.

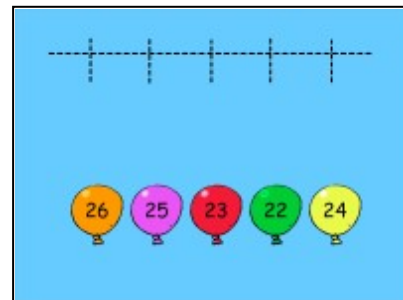
Scaffolding: In the hint, the narrator names the numbers in order for the student and asks him or her to select from the same three answer choices the number that comes after the last number specified



Correct Order: Pre-K Spring - 2nd Grade Winter

The student is presented with a series of numbered objects in random order. The student is required to click on the objects in number order from the lowest to highest number. As items increase in difficulty, higher number values (with multiple digits) are presented and the value between the numbers in the series differs in quantity.

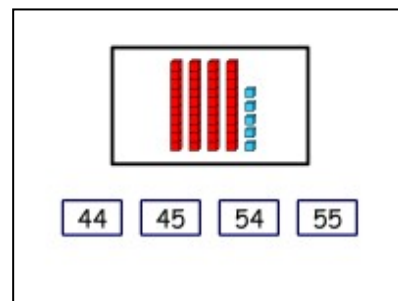
Scaffolding: The hint for less challenging items (Pre-K Spring to 1st Grade Winter), presents the question again with some numbers filled in and a blank space in place of the number that is missing from the sequence. The hint question asks the student to select the missing number from four answer choices. The hint for more advanced items (1st Grade Winter to 2nd Grade Winter) presents four answer choices with the objects in different orders and asks the student to select the one that is ordered correctly.



Unit Blocks: 1st Grade Fall - 2nd Grade Fall

The student is presented with a picture of unit blocks and asked to select a number that matches the number of blocks from four answer choices.

Scaffolding: The hint visually presents the number of blocks in each unit (e.g., 1, 10, 100) in written form next to the block on the screen. The blocks are simultaneously described orally by the narrator.



Place Value: 1st Grade Winter - 3rd Grade Spring

The student is presented with four large numbers and a question that is written on the screen and read by the narrator. The question asks the student to identify the number with a specified number of ones, tens, hundreds, etc. In more advanced questions, the student is presented with a table with columns that read from left to right: thousands, hundreds, tens, and ones. Tally marks underneath the table represent the numbers that belong in each place value. The student is asked to select the number that is represented in the chart from four answer choices.

Ten Thousands	Thousands	Hundreds	Tens	Ones
32,549	94,523	3,254	325	

Scaffolding: The hint presents corrective feedback for each incorrect response that indicates how many ones, tens or hundreds were in the answer choice selected by the student. The hint presents the number in expanded form and the student is asked to identify the number that is the same as the expanded number from four answer choices.

Expanded Notation: 2nd Grade Winter - 3rd Grade Winter

The student is presented with the expanded notation for a number and asked to select the number or numeral that is the same as the expanded number from four answer choices.

Scaffolding: The hint describes the relationship between the expanded and standard form of the numeral.

10,000 + 8,000 + 200 + 90 + 9

18,300

18,209

18,299

10,829

Number Comparison: 1st Grade Spring - 2nd Grade Spring

The student is presented with four large numbers (two digits or greater) and asked to select the number that is the largest. In more advanced questions, the student is presented with two numbers side by side with answer choices including the symbols for greater than, less than, and equal to written below. The student is asked to select the answer choice that makes the number sentence true.

Scaffolding: The hint presents the questions again and asks the student to select the largest number. The more advanced hint instructs the student using an example of two different numbers and shows him or her how the greater than and less than symbols would be applied to the numbers in the example. The student is presented with the original item again and asked to select the symbol that makes the number sentence true from the same three answer choices.

227 272

> = <

Fraction ID: 2nd Grade Fall - 3rd Grade Spring

The student is presented with a fraction in numerical form and a set of circles, each divided into a different number of equal parts with some parts shaded. The student is asked to select the circle that represents the given fraction. In some questions, the student is presented with a picture and a word problem read by the narrator. The student is required to select from four answer choices the fraction that corresponds to the problem.

Scaffolding: The hint instructs the student that a fraction has equal parts and asks him or her to select the fraction that has the number of equal parts presented in the original item. Following the word problems, the hint presents a circle that depicts the fraction presented in the word problem with the numerator shaded in blue. The student is asked to select

$\frac{1}{4}$ $\frac{4}{4}$ $\frac{1}{5}$ $\frac{3}{4}$

the fraction that identifies how much of the circle is shaded in blue from the same four answer choices.

Fraction Comparison: 2nd Grade Spring - 3rd Grade Spring

The student is presented with two fractions side by side. The answer choices consist of the symbols for greater than, less than, and equal to, which are named by the narrator when the student moves the mouse over them. The student is asked to select the answer choice that makes the number sentence true. Some items also include a suggestion to draw a picture of the fraction if the student is not sure of the answer.

Scaffolding: The hint presents bars or circles (in the form of pies) that are shaded to visually represent the fraction with the numerical fraction written next it. The student is asked to look at the bars or circles and the fraction written next to them and click on the symbol that makes the number sentence true.

The interface shows two yellow boxes containing the fractions $\frac{1}{8}$ and $\frac{1}{6}$ side-by-side. Between them is a dashed square box for an answer. Below these are three blue-outlined boxes containing the symbols $>$, $=$, and $<$.

Fraction Addition and Subtraction: 3rd Grade Winter - 3rd Grade Spring

The student is presented with an addition or subtraction equation containing two fractions. He or she is asked to perform the operation and select from four choices the fraction that corresponds to the answer.

Scaffolding: The hint instructs the student that when subtracting (or adding) fractions with the same denominator, he or she must simply subtract (or add) the numerators. Following more advanced subtraction items that contain whole numbers in the fractions, a visual depiction of the first fraction is presented and the student is asked what fraction he or she would get by subtracting the second fraction. Following more challenging addition items, a visual depiction of each fraction is presented and the student is asked what fraction he or she would get by adding them together.

The interface shows the equation $\frac{1}{8} + \frac{2}{8} =$ at the top. Below it are four yellow boxes containing the fractions $\frac{3}{8}$, $\frac{3}{16}$, $\frac{1}{8}$, and $\frac{8}{3}$.

Decimal Comparison: 3rd Grade Fall - 3rd Grade Spring

The student is presented with two decimals side by side. The answer choices consist of the symbols for greater than, less than, and equal to, which are named by the narrator when the student moves the mouse over them. The student is asked to select the symbol that makes the number sentence true. More difficult items have more digits following the decimal.

Scaffolding: The hint presents an equation with the decimal numbers from the original question now represented as dollar and cent amounts. The narrator indicates that the student should think about the decimals in terms of money and verbalizes the two equations using the numbers presented in the original item, indicating which one is a smaller amount

The interface shows two yellow boxes containing the decimals 0.25 and 25.0 side-by-side. Between them is a dashed square box for an answer. Below these are three blue-outlined boxes containing the symbols $>$, $=$, and $<$.

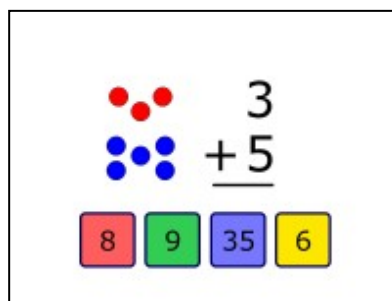
in terms of dollars and cents. The student is asked to click on the symbol that makes the number sentence true.

Operations (Kindergarten – 3rd Grade)

Basic and Concrete Addition: Kindergarten Fall - Kindergarten Spring

The student is presented with a formal equation with numbers under 10 and a concrete depiction using balls. The equation is read by the narrator and the student is required to select the correct answer from four choices.

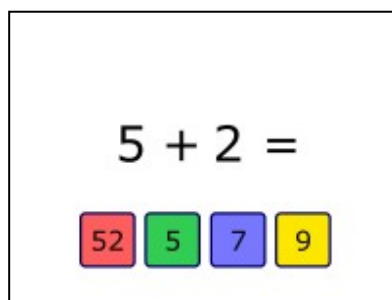
Scaffolding: The hint provides corrective feedback for the student's incorrect response and if applicable, a reminder that a plus sign means that he or she has to add the numbers, or to add the numbers, not just put them together. The hint question presents the same visual equation and the narrator provides an example with objects (e.g., if I have 1 ball and give you 2 more, how many do you have all together?).



Formal Addition (up to 20): Kindergarten Fall - 2nd Grade Fall

The student is presented with a numerical equation, which is also read by the narrator. The student is required to select the correct answer from four choices.

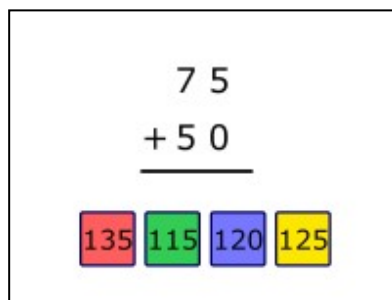
Scaffolding: The hint provides corrective feedback for the student's incorrect response and if applicable, states a reminder that a plus sign means that he or she has to add the numbers, or to add the numbers, not just put them together. The hint question for less challenging items presents the same visual equation and the narrator provides an example with objects (e.g., if I have 1 ball and give you 2 more, how many do you have all together?). The hint question following more challenging items presents a number line and explains how to use it to answer the question (e.g., if you start at 10, and go forward 7 steps, what number do you get?).



Formal Addition (over 20): 1st Grade Fall - 3rd Grade Spring

The student is presented with a numerical equation, which is also read by the narrator in the less challenging items. The student is required to select the correct answer from four choices. As items increase in difficulty they require the student to regroup and calculate larger numbers.

Scaffolding: The hint provides corrective feedback for the student's incorrect response and if applicable, either a reminder that a plus sign means that he or she has to add the numbers, or that regrouping is needed. The hint question for less challenging items presents a number line and explains how to use it to answer the question (e.g., if you start at 33, and go forward 7 steps, what number do you get?). The hint for more

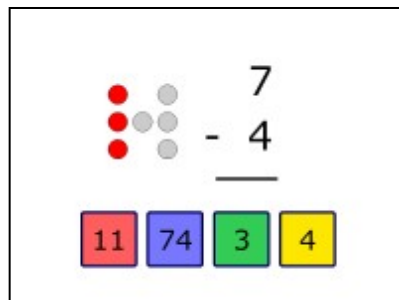


difficult items presents the numbers again with the columns highlighted and reminds student to first add the numbers in the ones column, then the tens, then the hundreds, and also to remember about regrouping.

Basic and Concrete Subtraction: Kindergarten Fall - Kindergarten Spring

The student is presented with a formal equation with numbers under 10 and a concrete depiction using balls. The numerical equation is read to the student by the narrator and the student is required to select the correct answer from four choices.

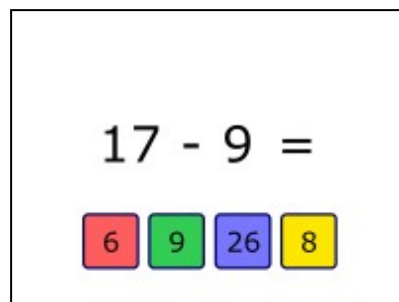
Scaffolding: The hint provides corrective feedback for the student's incorrect response and if applicable, instructs the student that the minus sign means that he or she has to take away or subtract the numbers, not put them together. The hint question displays the same equation, using sticks to visually depict the minuend and subtrahend. The sticks that represent the denominator are crossed out. The narrator states the question again, using the sticks as an example.



Formal Subtraction (up to 20): Kindergarten Winter - 3rd Grade Winter

The student is presented with a numerical equation, which is read by the narrator. The student is required to select the correct answer from four choices.

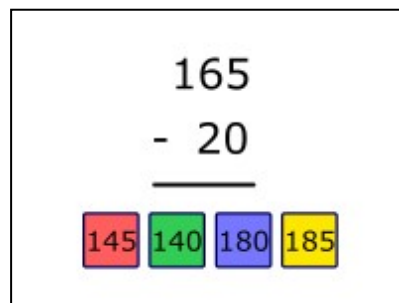
Scaffolding: The hint provides corrective feedback for the student's incorrect response and if applicable, a reminder that a minus sign means that he or she has to take away or subtract the numbers, not put them together. The hint question then presents a number line and explains how to use it to answer the question (e.g., if you start at 10, and go back 4 steps, what number do you get?).



Formal Subtraction (over 20): 1st Grade Spring - 3rd Grade Spring

The student is presented with a numerical equation, which is also read by the narrator in the less challenging items. The student is required to select the correct answer from four choices. As items increase in difficulty, they require the student to regroup and calculate larger numbers.

Scaffolding: The hint provides corrective feedback for the student's incorrect response and if applicable by instructing that a minus sign means he or she has to subtract the numbers and regrouping is needed. The hint question for easier items presents a number line and explains how to use it to answer the question (e.g., if you start at 33, and go back 7 steps, what number do you get?). The hint for more challenging items presents the numbers again with the columns highlighted and reminds the student to first subtract the numbers in



the ones column, then in the tens and hundreds columns and also to remember about regrouping.

Addition/Subtraction with Decimals: 2nd Grade Spring

The student is presented with a numerical equation with numbers that represent two monetary amounts. The student is required to select the correct answer from four choices. As items increase in difficulty they require the student to subtract and regroup. More challenging questions testing this sub-concept are presented in the form of word problems.

Scaffolding: The hint provides corrective feedback for the student's incorrect response and if applicable, states that the problem requires addition or subtraction, the decimal point needs to be carried down, the answer needs to be in dollars and cents, or the numbers need to be regrouped. The hint presents the numbers again with the columns highlighted and instructs the student to first add or subtract the numbers in the ones column, then the tens column, and then the hundreds column.

$$\begin{array}{r} \$3.30 \\ + \$1.85 \\ \hline \end{array}$$

☐ \$1.45 ☐ \$4.15 ☐ \$5.15 ☐ 515

Multiplication: 2nd Grade Winter - 3rd Grade Spring

The student is presented with a numerical multiplication problem and asked to select the correct answer from four choices.

Scaffolding: The hint for less challenging items presents the problem in the form of dots, with the first number depicted as a single row of dots and the second number represented by the number of rows. The narrator instructs the student that adding the number of dots in each row is equal to the multiplication of the two numbers in the original problem. The student is asked to select the total number of dots from the same four answer choices.

$$5 \times 6 =$$

☐ 36 ☐ 30 ☐ 35 ☐ 25

Division: 3rd Grade Fall - 3rd Grade Spring

The student is presented with a division problem and asked to select the correct answer from four choices.

Scaffolding: The hint presents the problem in the form of balls with the dividend divided into the number of groups specified by the divisor. The narrator identifies the total number of balls and the number of groups and asks the student if he or she can solve the problem.

$$3 \overline{)18} =$$

☐ 9 ☐ 6 ☐ 7 ☐ 8

Word Problems: 1st Grade Spring - 3rd Grade Spring

The student is presented with a word problem, which is also read by the narrator. The student is required to solve the problem and select the correct response from four answer choices. Simpler questions involve only one step; more advanced questions involve multiple steps. Operations assessed include (in order of difficulty) adding, subtracting, multiplying, dividing and adding and subtracting decimals.

Scaffolding: The hint explains the steps that the student is required to perform to solve the problem and presents the question again with the same answer choices. If applicable, hints include corrective feedback related to the student's incorrect response. For some items, hints present the question again, along with four number sentences. The student is required to select the sentence that corresponds to the steps needed to solve the problem. The number sentences all use the same numbers as presented in the word problem, but with different operation signs between them.

Amy swims 15 laps a day. How many laps does she swim in a week?

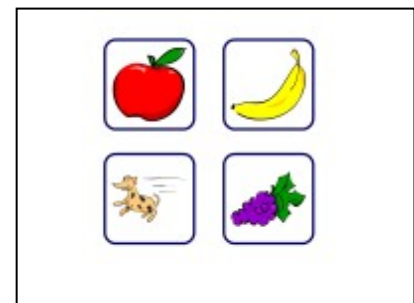
105	22
75	90

Patterns and Functions (Pre-K – 3rd Grade)

Categorization: Pre-K Fall - Kindergarten Spring

The student is presented with four objects, three of which are from the same category. The student is required to select the object that does not belong. The categories include color, shape, fruit, vehicles, vegetables, animals, clothing, writing utensils, etc.).

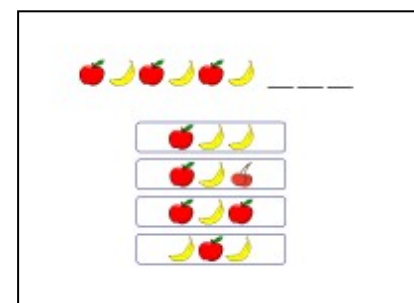
Scaffolding: The hint provides feedback for a student's incorrect response and states that the student should select one that is NOT in the specified category (e.g., click on the one that is NOT a fruit).



Shape/Color Patterns: Pre-K Fall - 2nd Grade Winter

The student is presented with a series of shapes or objects in a linear pattern, varying by color, shape, or type of object. The student is required to select the object(s) that comes next or fills the blank(s) from four answer choices.

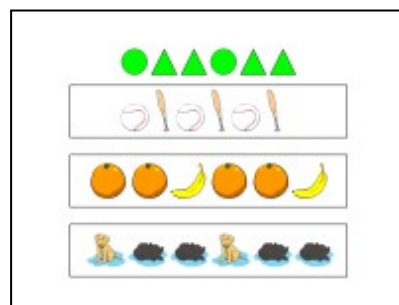
Scaffolding: The hint for less challenging items, presents the student with the same visual depiction, names the colored shapes in the order in which they are presented, and provides the student with a second chance to select the one that comes next from the same four answer choices. The hint for more challenging items presents the student with the same visual depiction, indicates that he or she should look for the repeating sequence of shapes in this pattern, and asks the student to find the one that comes next.



Matching Patterns: 1st Grade Spring - 2nd Grade Winter

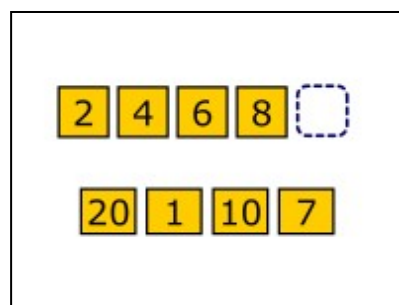
The student is presented with a linear pattern consisting of multiple shapes or objects varying by color, shape or type of object. The student is required to select from four sets of objects the set in which a different series of shapes is arranged according to the same pattern that is used in the original set.

Scaffolding: The hint highlights the repeating pattern for the student and indicates that the highlighted portion is a repeating pattern. The student is asked to select the set that has the same repeating pattern from the same four answer choices.

**Numerical Patterns:** Kindergarten Fall - 3rd Grade Spring

The student is presented with number tiles that make up a numerical pattern in a linear order. There are one or more blank spaces in the pattern and the student is required to select the number or numbers that go in the blank space(s) from four answer choices. In more advanced questions, the student is presented with a number sequence and asked to select what is happening in the pattern from answer choices that specify a number as well as whether the number is being added, subtracted, etc.

Scaffolding: The hint provides the student with the number that is added or subtracted each time to make the pattern and depicts this pattern visually using arches above the tiles to show the amount that is added or subtracted between each tile. The student is required to select the number or numbers that fit in the blank space(s) from the same four answer choices.

**Completing Functions:** 1st Grade Spring - 3rd Grade Spring

The student is presented with an incomplete equation or two expressions. The student is required to select the number or sign that best fits in the blank space from four answer choices. The operations required depend on the question's level of difficulty and include addition, subtraction, multiplication, and division.

Scaffolding: The hint for easier items presents four completed equations. The student is asked to select the equation that is correct. The hint for some challenging items presents student with a number line and asks the question verbally by asking what number or sign needs to be placed in the blank space to make it equivalent to the other part of the equation.

